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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,802	11/15/2006	Rolf Cremerius	KNH 1001 PCT	6136
27256	7590	03/03/2009	EXAMINER	
Dickinson Wright PLLC 38525 Woodward Avenue Suite 2000 Bloomfield Hills, MI 48304			JENNISON, BRIAN W	
			ART UNIT	PAPER NUMBER
			3742	
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			03/03/2009	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/562,802	<b>Applicant(s)</b> CREMERIUS ET AL.	
	<b>Examiner</b> BRIAN JENNISON	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2 and 13-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2 and 13-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 February 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/29/2005</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 2, 13-21, 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Clarke et al (US 5,221,327) as cited by applicant.**

Clarke teaches:

**Regarding Claim 2:** A process for joining components for torque transmission in a vehicle, the components being made from hardenable steel and having a material thickness, **(A method for welding hardenable steel which can be components in a torque transmission. See Col. 2, Line 35 and Fig. 2 for material thickness at 26)** by producing a weld seam without secondary heating, **(no preheating or secondary heating is needed. See Column 4, Lines 46-51)** comprising:

positioning a welding electrode with respect to a weld line;

applying a voltage;

supplying a plasma gas;

forming an arc; and **(A plasma arc is formed after an electrode is positioned and a voltage is applied. See Column 1, Lines 20-23)**

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melting the steel in the vicinity of the weld line over the entire material

thickness. **(Melting occurs in the vicinity of the weld line. See Column 1, Lines 24-28.)**

**Regarding Claim 13:** This process is capable of welding hardenable steel having a thickness of 2.0 mm to 10.0 mm. furthermore, It has been held that to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative sense and not amount to the mere claiming of a use of a particular structure (Ex. Parte Pfeiffer, 1962 C.D. 408 (1961). Claim 13 is not given patentable weight.

**Regarding Claims 14, 15:** Fig 4 shows the weld joint to be a single layer design.

**Regarding Claims 16, 17:** A butt seam may be welded in the metal. **See Column 1, Lines 55-57.**

**Regarding Claims 18, 19:** Welding was performed at a rate of 1.4m/minute, which is at least 0.2 m/min.

**Regarding Claim 20:** The weld seam 114 shown in Fig 3. is a radial circumferential seam, around the gear 112.

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**Regarding Claim 21 (as best understood):** The weld seam is made between a gear 112 and a shaft 116 (**See Column 8, Lines 60-65**) which are included in the parts of a torque transmission welded by the method involving no secondary heating, (**See Column 4, Lines 46-51**) when a plasma arc is formed after an electrode is positioned and a voltage is applied. (**See Column 1, Lines 20-23**) Melting occurs in the vicinity of the weld line. (**See Column 1, Lines 24-28.**)

**Regarding Claim 24:** Cracks in the weld seam are inhibited from forming in the hardenable steel pieces. **See Column 3, Lines 27-31.**

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 22-23, 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clarke et al in view of Brenner et al (US 6,365,866) as cited by applicant.**

The teachings of Clarke have been discussed above.

Clarke also teaches:

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**Regarding Claims 22-23:** The hollow shaft **See Fig 3.**

**Regarding Claim 25:** Cracks in the weld seam are inhibited from forming in the hardenable steel pieces. **See Column 3, Lines 27-31.**

Clarke fails to teach:

**Regarding Claims 22-23:** the wall thickness in the range of 2.0 mm to 10.0 mm.

**Regarding Claim 26:** a join comprising ductility in the range from 250HV to 650HV.

Brenner teaches:

**Regarding Claims 22-23:** The parts have a 3.0 mm thickness. **See Column 4, Lines 1-5.**

**Regarding Claim 26:** The welding seam has an average hardness of 280HV.

In view of Brenner et al's teachings it would have been obvious to one of ordinary skill in the art at the time of the invention to include with the teachings of Clarke et al, the wall thickness and the ductility range since, Brenner teaches a thickness of 3.0mm which is merely a change in size and is recognized as being within the skill of one having ordinary skill in the art. and a hardness or ductility of 280HV for inhibiting cracks in the weld.

**5. Claims 27-30 as best understood are rejected under 35 U.S.C. 103(a) as being unpatentable over Clarke et al in view of Kehrer (WO 2002/070911).  
References made to English equivalent US 2004/0136776 as cited by applicant.**

The teachings of Clarke have been discussed above.

Clarke fails to teach:

**Regarding Claims 27, 28:** A vehicle comprising an engine with a drive system, wherein the drive system includes components for torque transmission, and at least two components have been welded to one another by a process according to Claim 2, 18.

**Regarding Claims 29, 30:** A vehicle comprising at least two components made from hardenable steel and connected by a join comprising a weld seam produced by a process according to Claim 2, 18.

Kehrer teaches:

**Regarding Claims 27-30:** Paragraph [0002] states the parts being welded may be part of a vehicle such as a transmission with two parts being welded together. Paragraph [0011] discloses these parts made from hardenable steel may be joined by plasma welding.

In view of Kehrer's teachings it would have been obvious to one of ordinary skill in the art at the time of the invention to include with the teachings of Clarke, the two components joined by a plasma welding process since, Kehrer teaches that two hardenable steel parts of a vehicle or transmission may be welded using a plasma welding process for improved thermal and metallurgical properties of the weld seam.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Zehavi et al (US 2003/0089688) teaches a single layer plasma weld.

Bayer et al (US 2004/0149700) teaches a method for plasma welding.

Barnett (US 2003/0094443) teaches a plasma welding process.

Bayer et al (US 2003/0052097) teaches a method for plasma jet welding.

Siemers et al (US 5,070,228) teaches a single layer plasma welding method.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN JENNISON whose telephone number is (571)270-5930. The examiner can normally be reached on M-Th 7:00AM-5:00PM.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRIAN JENNISON/  
Examiner, Art Unit 3742

2/25/2009

/TU B HOANG/

Supervisory Patent Examiner, Art Unit 3742